

CLAIMS

1. A method for operating a pulse tube cryocooler system having a fixed volume containing working gas at a mean pressure and driven by a pressure wave generator at a frequency up to 500 hertz, said method comprising after experiencing a change in the mean pressure of the working gas, changing the frequency of the pressure wave generator directly with the change in the mean pressure of the working gas.

2. The method of claim 1 wherein the change in the mean pressure is due to a change in ambient temperature.

3. The method of claim 1 wherein the change in the mean pressure is due to a loss of working gas from the fixed volume.

4. The method of claim 1 wherein the change in the mean pressure is an increase in the mean pressure and the change in the frequency of the pressure wave generator is an increase in the frequency of the pressure wave generator.

5. The method of claim 1 wherein the change in the mean pressure is a decrease in the mean pressure and the change in the frequency of the pressure wave generator is a decrease in the frequency of the pressure wave generator.

6. The method of claim 1 wherein the pressure wave generator is a linear compressor driven by an electrically driven linear motor.

7. The method of claim 1 wherein the working gas comprises helium.

8. The method of claim 1 wherein the pressure wave generator is operating at a frequency within the range of from 15 to 80 hertz.